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EXAMINER
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EYLER, YVONNE L

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte NANCY DAOU, GAELLE FRERE, and WEI-MEI SUN

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Appeal 2010-010506  
Application 10/579,649  
Technology Center 1600

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Before TONI R. SCHEINER, LORA M. GREEN, and  
FRANCISCO C. PRATS, Administrative Patent Judges.

PRATS, Administrative Patent Judge.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims to a hair-conditioning composition. The Examiner rejected the claims for obviousness.

We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

### STATEMENT OF THE CASE

Claims 1, 2, 4-10, 12, and 13 stand rejected and appealed (App. Br. 5).

Claims 1 and 13 illustrate the claimed subject matter and read as follows:

Claim 1. A hair-conditioning composition comprising

a) 60% by weight or more of water,

b) from 0.1 to 10% by weight of alkyl trimethylammonium salt wherein the alkyl group is selected from C<sub>16</sub> to C<sub>22</sub> saturated alkyl chains and mixtures thereof,

c) from 0.02 to 5% by weight of dialkylethyl dimethylammonium salt wherein the alkyl chains are selected from C<sub>16</sub> to C<sub>22</sub> saturated or unsaturated alkyl chains and mixtures thereof,

d) from 0.5 to 10% by weight of a fatty material, comprising from 12 to 22 carbon atoms, selected from the group consisting of fatty alcohols, fatty acids, alkoxylated fatty alcohols and mixtures thereof, and

e) from 0.05 to 1% potassium chloride, wherein the weight ratio of the alkyl trimethylammonium salt to the dialkylethyl dimethylammonium salt is from 15:1 to 2:1.

Claim 13. A composition according to claim 1 wherein the composition is free of opacifiers that are other than components (b), (c), (d) and (e).

The sole rejection before us for review is the Examiner's rejection of claims 1, 2, 4-10, 12, and 13 under 35 U.S.C. § 103(a) as obvious over Kruger,<sup>1</sup> Pings,<sup>2</sup> and Sun<sup>3</sup> (Ans. 3-5).<sup>4</sup>

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<sup>1</sup> EP 0 956 850 A1 (published November 17, 1999).

<sup>2</sup> U.S. Patent No. 5,482,703 (filed October 12, 1993).

<sup>3</sup> U.S. Patent 6,613,316 B2 (filed October 22, 2001).

<sup>4</sup> In the Final Rejection, the Examiner had entered this rejection as two separate grounds (see Final Rejection 2-5). Appellants do not argue, by way

### OBVIOUSNESS

The Examiner cites Kruger as disclosing a hair conditioning composition that contains the water, alkyl trimethylammonium salt, dialkylethyl dimethylammonium salt, and fatty material recited in Appellants' claim 1 (Ans. 2-3). The Examiner concedes that "Kruger does not teach potassium chloride as the alkali metal salt" in its compositions, and to meet that limitation cites Pings as disclosing a hair conditioning composition that contains potassium chloride (*id.* at 4).

The Examiner also concedes that Kruger does not teach "the ratios of quaternary ammonium compounds when used as a mixture," and to meet that limitation cites Sun as disclosing "using two different conditioning agents at ratios that optimize their benefit [col 2, lines 59-60 and 67]. The ratio of monoalkyl quat [quaternary ammonium compound] to dialkyl quat ranges from about 15:1 to 2:1 or from about 10:1 to 2:1 [col 3, lines 38 and 40]" (*id.*).

Thus, the Examiner finds:

The ranges for the quaternary ammonium compounds as taught by Kruger overlap with those recited in the claims for the alkyl trimethylammonium salt, and the preferred range falls within that cited for the dialkylethyl dimethylammonium salt. The range for the amount of alkali metal salt as taught by Pings overlaps with the recited range. The amount of the fatty alcohol and water taught by Kruger falls within the recited ranges.

(*Id.*)

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of Reply Brief, or other filing, that the consolidated rejection presented in the Answer is an improper new ground of rejection.

Based on the references' teachings, the Examiner concludes that an ordinary artisan "would have been motivated to optimize the amounts of the components in the composition for the desired thickness (viscosity), opaqueness (resulting from the quaternary ammonium compounds and fatty alcohol) [Sun, col 3, line 6] . . . , and conditioning benefits on the hair" (id.). In particular, the Examiner urges, the ordinary artisan would have been "motivated to optimize the ratios of quaternary ammonium compounds based on the desired softness, shine, and combability of the hair" (id. at 5).

Appellants initially note that their invention is directed to the problem of providing "an opaque look [to rinse-off hair conditioners] without the deficiencies associated with traditional opacifiers" (App. Br. 11 (citing Spec. 2:23-25)). Thus, Appellants urge:

Quite unpredictably, applicants have found that a combination of specific cationic salts and specific alkali metal halide salt provides a solution to the problem noted above. Specifically, applicants have provided examples showing that, if both specific cationic salts are not used and/or, if the alkali metal salt is not used, the same degree of lightness (hence opacity and reflectivity) is not achieved (see page 22, lines 4-13, for example).

(Id.)

In contrast to claim 1, Appellants argue, the Sun reference appears to contain "no disclosure specifically of dialkoyl quats and no examples of combination of monoalkyl quats with dialkoyl quats. By contrast, our invention very specifically claims dialkoylethyldimethylammonium salt. This is not only a dialkoyl, but a specific dialkoylethyl quat" (id. at 12). Thus, Appellants urge, there is "certainly no motivation to make such specific combination or any reason to believe there would be associated a

specific benefit (e.g., in terms of lightening) when using such combination” (id.).

Regarding the Pings reference, Appellants urge that it describes a typical hair conditioning composition that contains “typical quaternary ammonium materials which may contain four alkyl groups” (id. (citing Pings, col. 5, ll. 20-26)). However, Appellants argue, there is “no particular preference for trimethylammonium salts. Further, preferred quats are said to include dialkyldimethylammonium quats (see col, 6, lines 51-52). There is nothing about dialkoylalkyldimethyl quats” (id.).

Similarly, Appellants argue, Kruger, “broadly discloses possible use of one or more quats (see ¶0006). A typical example is said to be cetrimonium chloride (¶0007)” (id.). However, Appellants urge, there is “no recognition of the necessary combination of such cetrimonium with a dialkoyl alkyl dimethyammonium, or of the resultant benefit from such combination. Certainly, the examples show only the use of centrimonium chloride alone” (id. at 12-13).

In sum, Appellants argue, the cited references “merely broadly disclose the use of a large, potential variety of quats in hair conditioner compositions. There are, however, no examples of the specific combination of cationic quats (let alone with specific alkali metal salt) disclosed in our invention and no prima facie case of obviousness has been made” (id. at 13).

Regarding claim 13, Appellants again argue that the cited references do not describe the benefit of the claimed composition, which allows omission of opacifying agents, and that “[b]ecause there is no recognition of the benefit, neither Kruger nor Sun disclose compositions which are necessarily free of opacifiers other than components otherwise specifically

recited” (id. at 14). Thus, Appellants urge, “the compositions not only are independently novel and unobvious as claimed in claims 1, 2 4-10 and 12 discussed above but, because of applicants recognition of their benefit, the absence of opacifiers in claim 13 highlights this distinction” (id.).

Appellants’ arguments do not persuade us that the Examiner failed to make a prima facie case of obviousness.

In *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), the Supreme Court reaffirmed that “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” Id. at 417 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)).

In the instant case it is undisputed that the cited references teach that all of the ingredients in Appellants’ claim 1 were known to be useful in hair conditioning compositions. Appellants suggest that the claimed combination of quaternary ammonium compounds produces an “unpredictabl[e]” result (App. Br. 11).

Appellants have not, however, traversed the Examiner’s optimization rationale by advancing any specific evidence suggesting that the combination and proportions of ingredients recited in claim 1 provide an unexpected result when compared to the closest prior art. See *In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991) (“[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art.”).

We note, as Appellants urge, that although the Supreme Court emphasized “an expansive and flexible approach” to the obviousness

question, KSR, 550 U.S. at 415, the Court also reaffirmed the importance of determining “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” Id. at 418 (emphasis added).

We do not agree with Appellants, however, that the references fail to provide a sufficiently specific teaching that suggests the claimed combination of quaternary ammonium compounds. Claim 1 requires the hair conditioning composition to contain two quaternary ammonium compounds: component (b), an alkyl trimethylammonium salt wherein the alkyl group is selected from C<sub>16</sub> to C<sub>22</sub> saturated alkyl chains and mixtures thereof, and component (c), a dialkylethyl dimethylammonium salt wherein the alkyl chains are selected from C<sub>16</sub> to C<sub>22</sub> saturated or unsaturated alkyl chains and mixtures thereof.

As seen in Appellants’ Specification, with respect to component (b), among “[p]articularly suitable alkyl trimethylammonium salts are cetyl trimethylammonium chloride (C<sub>16</sub>)” (Spec. 5; see also App. Br. 16 (“Claim 6. A composition according to claim 1 wherein the alkyl trimethylammonium salt is cetyl trimethylammonium chloride.”)).

As also seen in Appellants’ Specification, with respect to component (c), “[a] particularly preferred salt is dipalmitoylethyl dimethylammonium chloride, commercially available as Armocare VGH-70 (trade name) from Akzo GmbH” (Spec. 5; see also App. Br. 16 (“Claim 7. A composition according to claim 1 wherein the dialkylethyl dimethylammonium salt is dipalmitoylethyl dimethylammonium chloride.”)).

As the Examiner points out (Ans. 6), Kruger specifically teaches that combinations of alkyl trimethylammonium salts and dialkylethyl



dimethylammonium salts are useful in hair conditioning compounds, and explicitly provides Appellants' preferred salts as suitable examples of the combined compounds: "Either a single quat or a mixture of the aforementioned quats can be used. A typical example of a suitable alkylquat is cetyl trimethylammonium chloride or cetrimonium chloride (i.e. Arquad<sup>®</sup> 16- 25, ex. Akzo Nobel) and of a diesterquat is dipalmitoylethyldimonium chloride (i.e. Armocare<sup>®</sup> VGH-70, ex. Akzo Nobel)." (Kruger [0007].)

Given Kruger's teaching, in the same breath, of combinations not only of the same categories of quaternary ammonium salts as recited in Appellants' claim 1, but Appellants' preferred salts, Appellants' arguments do not persuade us that the cited references fail to suggest, with sufficient specificity, the claimed combination of quaternary ammonium salts. As Appellants' arguments do not persuade us that the Examiner failed to make a prima facie case of obviousness, and as Appellants point to no specific evidence of unexpected results to rebut that prima facie case, we affirm the Examiner's obviousness rejection of claim 1, as well as claims 2, 4-10, and 12, which were not argued separately. See 37 C.F.R. § 41.37(c)(1)(vii).

Regarding claim 13, Appellants point to nothing in any of the cited references suggesting that opacifiers are necessary in hair conditioning compositions. We are therefore not persuaded that the Examiner erred in concluding that an ordinary artisan would have considered it obvious to omit an opacifier from the hair conditioner suggested by Kruger, Pings, and Sun. Accordingly we also affirm the Examiner's obviousness rejection of claim 13.

### SUMMARY

For the reason discussed, we affirm the Examiner's rejection of claims 1, 2, 4-10, 12, and 13 under 35 U.S.C. § 103(a) as obvious over Kruger, Pings, and Sun.

### TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

### AFFIRMED

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